

Appl. No. 10/040,063
Amtd. Dated June 5, 2006
Reply to Office Action of March 3, 2006

Listing of Claims:

1. (Currently Amended) A method of reading out an electronic image sensor that is subdivided into image points and wherefrom image points or groups of image points can be read out with a predetermined clock period, and organized into at least two quantities of image points and/or groups of image points whose elements can be read out at different scanning rates, the method comprising:

identifying selecting a region of interest of the sensor for which the desired temporal resolution of the image is higher than that for another unselected regions of the sensor; and

collecting and storing information from the unselected regions for reading at a later stage, and

separately reading each of the image points to provide an image, wherein the quantities of image points and/or groups of image points in the selected region are read out at a higher scanning rate than the scanning rate for quantities of image points and/or groups of image points in the other unselected regions, and

wherein a prolonged integration of an exposure in the unselected regions results in an improved local signal-to-noise ratio and a higher image quality in the unselected regions.

2. (Previously Presented) A method as claimed in claim 1, characterized in that the image points are grouped so as to form lines of a two-dimensional image and that the lines that belong to a quantity are all read out at a uniform scanning rate.

3. (Previously Amended) A method as claimed in claim 2, characterized in that lines of image points of the image are alternately assigned to at least two quantities with different scanning rates.

Appl. No. 10/040,063
Amdt. Dated June 5, 2006
Reply to Office Action of March 3, 2006

4. (Previously Amended) A method as claimed in claim 1, characterized in that the quantities of image points and/or groups of image points overlap at least in a region of the image surface.

5. (Previously Amended) A method as claimed in claim 1, characterized in that amplification of the signals from image points read out is performed in dependence on the relevant scanning rate of the image points.

6. (Previously Presented) A method as claimed in claim 1, characterized in that the image sensor is sensitive to X-rays.

7. (Previously Amended) A method as claimed in claim 1, characterized in that the intensity of irradiation of image points that are read out at a lower scanning rate is less than the intensity of irradiation of image points that are read out at a higher scanning rate.

8. (Currently Amended) A device for reading out an electronic image sensor that is subdivided into image points and is provided with an addressing unit for selecting the image points and/or groups of image points to be read out within one clock period as well as with a reading unit for reading out the selected and addressed image points and/or groups of image points, characterized in that the addressing unit is arranged in such a manner that it selects the addressable image points and/or groups of image points at different scanning rates, the device collects and stores information from unselected image points for reading at a later stage, and the device reads out quantities of image points and/or groups of image points in a region of interest of the sensor having a higher desired temporal resolution at a higher rate than the rate at which the device reads out quantities of image points and/or groups of image points in the another unselected regions of the sensor, wherein a prolonged integration of an exposure in the unselected image points results in an improved local signal-to-noise ratio and a higher image quality in the unselected regions.

Appl. No. 10/040,063
Amtd. Dated June 5, 2006
Reply to Office Action of March 3, 2006

9. (Cancelled)

10. (Previously Amended) A device as claimed in claim 8, characterized in that the reading unit is arranged in such a manner that it bases the signal amplification on the scanning rate at which the relevant image points and/or groups of image points are addressed.

11. (Previously Presented) A device as claimed in claim 8, characterized in that the image points are grouped so as to form lines of a two-dimensional image and that the lines that belong to a quantity are all read out at a uniform scanning rate.

12. (Previously Presented) A device as claimed in claim 11, characterized in that lines of image points of the image are alternately assigned to at least two quantities with different scanning rates.

13. (Previously Presented) A device as claimed in claim 8, characterized in that the quantities of image points and/or groups of image points that are read out at different rates overlap at least in a region of the image surface.

14. (Currently Amended) A device for processing signals from an electronic image sensor that is subdivided into image points, comprising an addressing unit for selecting image points to be read out and a reading unit for reading out the selected image points, the device being adapted to select and read out a set of the image points to form an image having uniform spatial resolution, the set of image points including a first group of image points in a region of interest that is read out at a first rate and a second group of image points outside said region of interest that is read out at a second rate, the second rate being less than the first rate, the device being adapted to collect and store information from image points outside the region of interest for reading at a later stage, wherein a prolonged integration of the exposure in the image points

Appl. No. 10/040,063
Amtd. Dated June 5, 2006
Reply to Office Action of March 3, 2006

outside the region of interest results in an improved local signal-to-noise ratio and a higher image quality.

15. (Previously Presented) A device as claimed in claim 14, wherein the image points are grouped so as to form lines of a two-dimensional image, the first group of image points including a first set of lines and a second group of image points including a second set of lines.

16. (Previously Presented) A device as claimed in claim 14, wherein the set of image points includes image points that at certain times are included in the first group of image points and at other times are included in the second group of image points.

17. (Previously Presented) A device as claimed in claim 14, wherein the area of the image sensor containing the first group of image points overlaps the image area containing the second group of image points.

18. (Previously Presented) A device as claimed in claim 14, wherein the processing of signals from the image sensor includes amplification, and the amount of amplification from the first group of image points differs from the amount of amplification from the second group of image points.

19. (Previously Presented) A device as claimed in claim 14, wherein the image sensor is sensitive to X-rays.